We claim:

1. A method of identifying molecules, comprising:

modifying a detectable property of a nano-scale fullerene structure;

attaching the nano-scale fullerene structure to a reactive molecule;

selecting the nano-scale fullerene structure as a result of preferential interaction between the reactive molecule and a sample molecule;

placing the selected nano-scale fullerene structure on a substrate; and

analyzing a surface of the substrate based on the detectable property to detect the nano-scale fullerene structure.

2. The method of claim 1, wherein the nano-scale fullerene structure includes a carbon nanotube.

3. The method of claim 1, wherein modifying a detectable property includes modifying a friction coefficient.

4. A method of identifying molecules, comprising:

modifying a friction coefficient of a carbon nanotube;

attaching the carbon nanotube to a reactive molecule;

selecting the carbon nanotube as a result of preferential interaction between the reactive molecule and a sample molecule;

placing the selected carbon nanotube on a substrate; and

measuring friction characteristics of the substrate to detect the carbon nanotube.

5. The method of claim 4, wherein the sample molecule includes a DNA molecule.

6. The method of claim 4, wherein the reactive molecule includes an assay molecule.

7. The method of claim 4, wherein the operations are performed in the order presented.

8. The method of claim 4, wherein the friction coefficient of the carbon nanotube is modified after the carbon nanotube is attached to the reactive molecule.

9. The method of claim 4, wherein modifying the friction coefficient of the carbon nanotube includes increasing the friction coefficient of the carbon nanotube.

10. The method of claim 4, wherein modifying the friction coefficient of the carbon nanotube includes acid treating the carbon nanotube.

11. The method of claim 4, wherein modifying the friction coefficient of the carbon nanotube includes attaching a chemical species to the surface of the carbon nanotube.

12. The method of claim 11, wherein attaching a chemical species to the surface of the carbon nanotube includes attaching a carboxylic acid group to the surface of the carbon nanotube.

13. The method of claim 4, wherein measuring friction characteristics of the substrate includes atomic force microscopy (AFM) measurements of the friction characteristics of the substrate.

14. A method of identifying molecules, comprising:
modifying electrical properties of a carbon nanotube;
attaching the carbon nanotube to a reactive molecule;
selecting the carbon nanotube as a result of preferential interaction between the reactive molecule and a sample molecule;
placing the selected carbon nanotube on a substrate; and
detecting the carbon nanotube using electrical surface detection techniques.

15. The method of claim 14, wherein modifying the electrical properties of the carbon nanotube includes acid treating the carbon nanotube.

16. The method of claim 14, wherein detecting the carbon nanotube includes detecting the carbon nanotube using scanning tunneling microscopy (STM) measurements.

17. The method of claim 14, wherein the sample molecule includes a DNA molecule.

18. A molecular identification assembly, comprising:
a reactive molecule;
a carbon nanotube attached to the reactive molecule; and
a chemical modifier attached to the carbon nanotube, the chemical modifier altering the friction coefficient of the carbon nanotube.

19. The molecular identification assembly of claim 18, wherein the reactive molecule includes an assay molecule.

20. The molecular identification assembly of claim 19, wherein the assay molecule is adapted to combining with portions of a DNA molecule.

21. The molecular identification assembly of claim 18, wherein the chemical modifier includes a carboxylic acid group.

22. The molecular identification assembly of claim 18, wherein the friction coefficient is increased.

23. The molecular identification assembly of claim 18, wherein the friction coefficient is decreased.

24. A method of forming a molecular identification assembly, comprising:
modifying a friction coefficient of a carbon nanotube; and
attaching the carbon nanotube to a reactive molecule.

25. The method of claim 24, wherein attaching the carbon nanotube to the reactive molecule includes attaching the carbon nanotube to an assay molecule adapted for combining with portions of a DNA molecule.

26. The method of claim 24, wherein modifying the friction coefficient of the carbon nanotube includes increasing the friction coefficient of the carbon nanotube.

27. The method of claim 24, wherein the operations are performed in the order presented.

28. The method of claim 24, wherein the friction coefficient of the carbon nanotube is modified after the carbon nanotube is attached to the reactive molecule.

29. The method of claim 24, wherein modifying the friction coefficient of the carbon nanotube includes acid treating the carbon nanotube.

30. The method of claim 24, wherein modifying the friction coefficient of the carbon nanotube includes attaching a chemical species to the surface of the carbon nanotube.

31. The method of claim 30, wherein attaching the chemical species to the surface of the carbon nanotube includes attaching a carboxylic acid group to the surface of the carbon nanotube.